

REMARKS

In the Office Action mailed March 7, 2006, the Examiner took the following action: (1) rejected claims 1, 2, 4, 5, 9-12, 14, 16, 20 and 23 under 35 U.S.C. §102(b) as being anticipated by WO 00/56541; (2) rejected claims 3, 13, and 15 under 35 U.S.C. §103(a) as being unpatentable over WO 00/56541; and (3) rejected claims 7, 17, 19, 21-22, 24, and 38-44 under 35 U.S.C. §103(a) as being unpatentable over WO 00/56541 in view of Westre (U.S. 5,866,272). Applicants respectfully request reconsideration of the application in view of the foregoing amendments and the following remarks.

I. Rejections of claims 1, 2, 4, 5, 9-12, 14, 16, 20 and 23 under 35 U.S.C. §102(b) as being anticipated by WO 00/56541

As amended, claim 1 recites:

A laminate structure, comprising:

a first region having a non-uniform thickness, the first region including:

a first layer having:

a first portion of a non-metallic material, the first portion at least partially encompassing a cutout region;

a second portion of a metallic material formed within the cutout region, the second portion abutting the first portion;

a second layer adjacent the first layer that non-interruptably extends along the first layer, the second layer being formed from a non-metallic material; and

a third layer having a first portion of a non-metallic material, the first portion at least partially encompassing a cutout region, and a second portion of a metallic material formed within the cutout region, the second portion being co-planar with the first portion, and wherein the second layer is disposed between the first and third layers. (emphasis added).

Specific embodiments of laminate structures as recited in claim 1 are disclosed with particularity, for example, on pages 5-6 and in Figure 3 of the subject application.

WO 00/56541

WO 00/56541 teaches a composite material with a reinforced connecting area. As best shown in Figure 4, WO 00/56541 teaches a composite material that includes a connecting area 4 coupled to a fiber composite 1 by a transition area 3. As shown in Figures 1-4 and 6, according to WO 00/56541, the composite material (including the connecting area 4, fiber composite 1, and transition area 3) is of uniform thickness.

WO 00/56541 fails to disclose, teach, or fairly suggest the laminate structure recited in claim 1. More specifically, WO 00/56541 fails to teach or fairly suggest a laminate structure having a first region that includes the first, second, and third layers as recited in claim 1, wherein the *first region has a non-uniform thickness* as further recited in claim 1. As described above, WO 00/56541 teaches composite materials having only a uniform thickness.

Westre (U.S. 5,866,272)

Westre fails to remedy the above-noted deficiencies of WO 00/56541. More specifically, Westre fails to teach or fairly suggest a laminate structure having a first region that includes the first, second, and third layers, *wherein the a first layer includes a first portion of a non-metallic material, the first portion at least partially encompassing a cutout region, and a second portion of a metallic material formed within the cutout region, the second portion abutting the first portion* as recited in claim 1, wherein the *first region has a non-uniform thickness* as further recited in claim 1. According to Westre, layers of fiber-reinforced polymeric material are interleaved with metallic layers. Thus, Westre fails to anticipate claim 1, and claim 1 is allowable.

Furthermore, there is no motivation to combine the teachings of Westre with the teachings of WO 00/56541. "The PTO bears the burden of establishing a case of *prima facie* obviousness." *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529 (Fed. Cir. 1993). To establish a

prima facie case of obviousness, the Examiner must present evidence showing the following three criteria are met: (1) there must be some suggestion or motivation to modify the reference or combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art references must teach or suggest all claim limitations. MPEP §2143. "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art." *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, a *prima facie* case of obviousness has not been established because there has been no showing of any suggestion or motivation to combine the teachings of the cited references. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Since there is no showing of any suggestion or motivation to combine the teachings of WO 00/56541 and Westre in either of these references, there is no motivation to combine these references.

Furthermore, Applicants respectfully submit that to selectively choose certain teachings of WO 00/56541 and Westre and combine those teachings with the other reference would involve impermissible hindsight analysis. The Federal Circuit has cautioned that when analyzing the patentability of claims pursuant to 35 USC § 103(a), the phrase "at the time the invention was made" is the statutory phrase "that guards against entry into the tempting but forbidden zone of hindsight." *In re Dembiczak*, 175 F.3d 994, 998, 50 USPQ2d 1614 (Fed. Cir. 1999) (quotation marks omitted). "[T]he best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references." *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999); *citing In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998).

For the foregoing reasons, Applicants respectfully submit that claim 1 is allowable over WO 00/56541 and Westre. Claims 2-5, 7, and 9 depend from claim 1 and are allowable at least due to their dependencies upon claim 1 and also due to additional limitations recited in those claims.

Assuming *arguendo* and without prejudice that the teachings of WO 00/56541 and Westre may be combined in any properly motivated fashion, such combination still fails to teach or fairly suggest the laminate structures recited in claims 4, 5, and 7. More specifically, claim 4 recites the laminate structure of claim 1, further comprising a second region integrally coupled to the first region by one or more layers of non-metallic material, *the first layer of the first region not extending into the second region*. (emphasis added). Claim 5 recites the laminate structure of Claim 4, wherein the first region includes a minimum-thickness portion, *the second region being integrally coupled to the minimum-thickness portion and having a thickness approximately equal to the minimum thickness portion of the first region*. Claim 7 recites the laminate structure of Claim 4, *wherein the second region consists essentially of one or more non-metallic layers*. These additional limitations are also not taught or fairly suggested by the combined teachings of WO 00/56541 and Westre (assumed *arguendo* and without prejudice). Accordingly, claims 4, 5, and 7 are also allowable over the cited references for these additional reasons.

Claims 10-17 and 19-24

Similarly, claim 10 recites:

A laminate structure comprising:

a first region having a non-uniform thickness, the first region including:

- a metal-polymer lamina, the metal-polymer lamina having a first face and a second face spaced apart from the first face, extending to a terminal edge, the lamina including:
 - a ply of fiber-reinforced polymer extending between the first face and the second face and having at least one interior edge, the interior edge defining at least one cutout;
 - a ply of metal foil extending between the first face and the second face substantially from the interior edge to fill the at least one cutout; and
- a polymer lamina adjacent the metal-polymer lamina, the polymer lamina having a third face and a fourth face spaced apart from the third face, the polymer lamina including a ply of fiber-reinforced polymer that extends between the third face and the fourth face and extends non-interruptably along the metal-polymer lamina and substantially to the terminal edge. (emphasis added).

As described more fully above with respect to claim 1, the cited references (WO 00/56541 and Westre) fail to disclose, teach, or fairly suggest the laminate structure recited in claim 10. More specifically, the cited references fail to teach or fairly suggest a laminate structure having a first region that includes a metal-polymer lamina and a polymer lamina as recited in claim 10, wherein the *first region has a non-uniform thickness* as further recited in claim 10. Thus, claim 10 is allowable over the cited references. Claims 11-17 and 19-24 depend from claim 10 and are allowable at least due to their dependencies upon claim 10 and also due to additional limitations recited in those claims.

Again, assuming *arguendo* and without prejudice that the teachings of WO 00/56541 and Westre may be combined in any properly motivated fashion, such combination still fails to teach or fairly suggest the laminate structures recited in claims 16, 17, and 19. More specifically,

claim 16 recites the laminate structure of claim 10, further comprising a second region integrally coupled to the first region by one or more layers of non-metallic material, *the metal-polymer lamina of the first region not extending into the second region.* (emphasis added). Claim 17 recites the laminate structure of Claim 16, wherein the first region includes a minimum-thickness portion, *the second region being integrally coupled to the minimum-thickness portion and having a thickness approximately equal to the minimum thickness portion of the first region.* Claim 19 recites the laminate structure of Claim 16, *wherein the second region consists essentially of one or more non-metallic layers.* These additional limitations are also not taught or fairly suggested by the combined teachings of the cited references (assumed *arguendo* and without prejudice). Accordingly, claims 16, 17, and 19 are also allowable over the cited references for these additional reasons.

Claims 38-44

Finally, claim 38 recites:

A laminate structure comprising:

a first region having a non-uniform thickness, the first region including:

a metal-polymer lamina, the metal-polymer lamina having a first face and a second face spaced apart from the first face, extending to a terminal edge, the lamina including:

a ply of fiber-reinforced polymer extending between the first face and the second face and having an interior edge, the interior edge defining at least one cutout; and

a ply of metal foil extending between the first face and the second face substantially from the interior edge to fill the at least one cutout;

a fiber-reinforced polymer lamina, the polymer lamina having a third face and a fourth face spaced apart, extending to the terminal edge, the lamina including:

a ply of fiber-reinforced polymer extending non-interruptably along the metal-polymer lamina and substantially to the terminal edge; and

an adhesive resin interposed between the metal-polymer lamina and the fiber-reinforced polymer lamina to adhesively couple the metal-polymer lamina to the fiber-reinforced polymer lamina. (emphasis added).

Again, as described more fully above with respect to claim 1, the cited references (WO 00/56541 and Westre) fail to disclose, teach, or fairly suggest the laminate structure recited in claim 38. More specifically, the cited references fail to teach or fairly suggest a laminate structure having a first region that includes a metal-polymer lamina and a polymer lamina as recited in claim 38, wherein the *first region has a non-uniform thickness* as further recited in claim 38. Thus, claim 38 is allowable over the cited references. Claims 39-44 depend from claim 38 and are allowable at least due to their dependencies upon claim 38 and also due to additional limitations recited in those claims.

Again, assuming *arguendo* and without prejudice that the teachings of the cited references may be combined in any properly motivated fashion, such combination still fails to

teach or fairly suggest the laminate structures recited in claims 41-43. More specifically, claim 41 recites the laminate structure of claim 38, further comprising a second region integrally coupled to the first region by one or more layers of non-metallic material, *the metal-polymer lamina of the first region not extending into the second region.* (emphasis added). Claim 42 recites the laminate structure of Claim 41, wherein the first region includes a minimum-thickness portion, *the second region being integrally coupled to the minimum-thickness portion and having a thickness approximately equal to the minimum thickness portion of the first region.* Claim 43 recites the laminate structure of Claim 41, *wherein the second region consists essentially of one or more non-metallic layers.* These additional limitations are also not taught or fairly suggested by the combined teachings of the cited references (assumed *arguendo* and without prejudice). Accordingly, claims 41-43 are also allowable over the cited references for these additional reasons.

CONCLUSION

For the foregoing reasons, Applicants respectfully submit that claims 1-5, 7, 9-17, 19-24 and 38-44 are now in condition for allowance. If there are any remaining matters that may be handled by telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

Respectfully Submitted,

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By: _____

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